MB879

Intel Pentium® M
ATI Radeon Xpress 200
Mini-ITX Motherboard

USER'S MANUAL

Version 1.0

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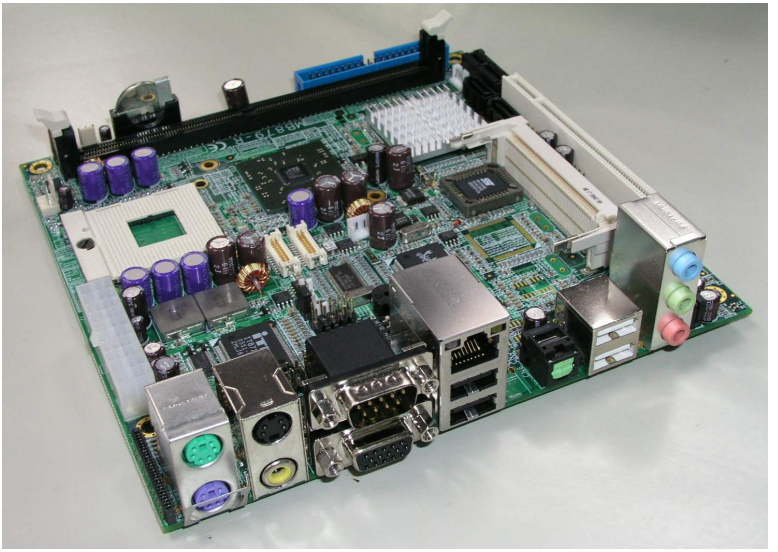


THE MB879 MINI ITX MOTHERBOARD

Introduction

Product Description

Designed for gaming and multimedia applications, the MB879 Mini ITX board incorporates the ATi Xpress 200 chipset, supporting CPU front side bus of 400MHz and 533MHz. The board accommodates Pentium® M and Celeron® M processors with speeds up to 2.26GHz and one DDR2 DIMM memory.

The MB879 comes with the RC410MD Integrated Graphics Processor (IGP) that integrates 2D/3D graphics and a system controller in a single chip. The RC410MD delivers the best performance of all integrated graphics and core logic products in the market. It incorporates an ATI Radeon X300-based graphics core, which is coupled with 64-bit DDR/DDR2 SDRAM system memory interface for optimal performance.

The main features of the board are:

- Supports Pentium® M / Celeron® M processors (90nm process, 3xx only, 4xx not supported)
- Supports up to 2.26GHz, 400MHz/533MHz FSB
- One DDR2 SDRAM DIMM, Max. 1GB memory, supports DDR2-400/533/667
- Onboard 10/100 BaseT and Gigabit LAN (MB879F)
- ATi Mobility Radeon 9600 VGA for CRT / TV out / LVDS
- 2x SATA, 6x USB 2.0, **4x COM,** Watchdog timer, 1394
- 1x PCI, 1x MiniPCI, 1xPCI-E(x1) slots

Dimensions of the board are 170mm x 170mm.

Checklist

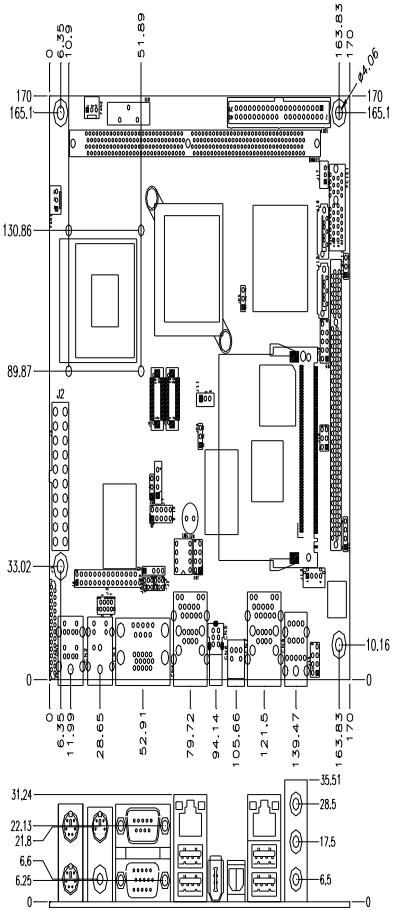
Your MB879 package should include the items listed below.

- The MB879 Pentium® M Mini-ITX motherboard
- This User's Manual
- 1 CD containing chipset drivers and flash memory utility

MB879 Specifications

CPU Socket	Socket 479 or FBGA on board
CPU Supported	Intel Pentium® M / Celeron® M, 90nm process, (3xx only, 4xx not supported)
CPU Voltage	0.700V ~ 1.708V
CPU Speed / FSB	Up to 2.26GHz / 533MHz FSB
Green /APM	APM1.2
Chipset	ATI Radeon Xpress 200 (RC410MD) / SB450 chipset NB: ATi Radeon Xpress 200 (RC410MD), 707-ball FCBGA SB: ATi SB450, 564-ball BGA
BIOS	Award BIOS, support ACPI function
Cache	512K/1M/2M Level 2 (CPU integrated)
Memory	1x DDR2 400/533/667 socket (single channel, w/o ECC), Max.1GB
VGA	ATi RC410MD built Mobility Radeon 9600 (M10) graphic core. Supports DirectX 9.0 and supports CRT, LVDS & TV-out
LVDS	ATi RC410MD built controller and transmitter, supports 24-bit single/dual channels LVDS
LAN	- Realtek RTL8100C-LF (10/100) LAN controller x1 - Marvell 88E8052 PCI Express x1 Gigabit LAN controller (option)
USB	ATi SB450 built-in USB2.0 host controller, supports 6 ports
Audio	ATi SB450 built-in Audio controller + AC97 Codec ALC655 for 5.1 CH (Line-out, Line-in & Microphone) NS LM4950 (8-ohm 2W stereo audio power amplifier)
Serial ATA	ATi SB450 built-in SATA host controller, supports 2 ports
1394 (option)	TI TSB43LV22 (dual port)
Local bus IDE	ATi SB450 built-in two channels Ultra DMA 100/133 - IDE1: 40 pins box-header; IDE2: Compact Flash (option)
LPC I/O	ITE IT8712: COM1, COM2 (RS232), IrDA, Floppy, hardware monitor (3 thermal inputs, 4 voltage monitor inputs, VID0-5 & 2 Fan Header). Parallel port not use
2nd I/O	Fintek F81216D for COM3 / COM4
Edge Connector	PS/2 Connector x1 for keyboard/mouse Gigabit LAN RJ-45 + dual USB stack connector 10/100 LAN RJ45 + dual USB stack connector DB9 & DB15 stack connector x1 for COM 1 and VGA RCA Jack x1 +S-Video for TV-Out SPDIF/OUT connector x1 1394 Connector x1 RCA Jack 3x1 for Audio (Line-Out, Line-In & Mic) – 1U height
Onboard Headers / Connectors	DF13-20 x2 for LVDS 40 pins, 2.54mm, box-header x 1 for IDE1 5x2 pins pin-header x1 for 2 USB ports 8 pins pin-header x1 for 1394 30 pins pin-header x1 for COM2/3/4 Slim Floppy connector x 1 5 pins pin-header x 1 for IrDA
Expansion Slot	PCI slot (32bits/33MHz) x1 PCI-Express (x1) x1 (align w/ PCI slot); Mini PCI connector x1
Digital I/O	Supports 4 in, 4 out
Watchdog Timer	Yes (256 segments, 0, 1, 2…255. sec/min)
Power Connector	Standard ATX 12V
System Voltage	+5V, +12V, -12V, 5VSB, -5V & 3.3V
Other Features	Modem Wakeup, LAN Wakeup
Board Size	170 x 170mm

Board Dimensions



Installations

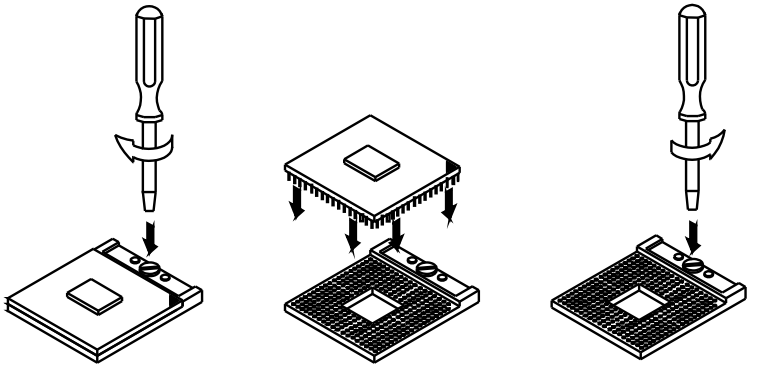
This section provides information on how to use the jumpers and connectors on the MB879 in order to set up a workable system. The topics covered are:

Installing the CPU.....
Installing the Memory.....
Setting the Jumpers.....
Connectors on MB879.....

Installing the CPU

The MB879 board supports a Socket 479 processor socket for Intel® Pentium® M or Celeron® M processors.

The processor socket comes with a screw to secure the processor. As shown in the left picture below, loosen the screw first before inserting the processor. Place the processor into the socket by making sure the notch on the corner of the CPU corresponds with the notch on the inside of the socket. Once the processor has slide into the socket, fasten the screw. Refer to the figures below.



***NOTE**: Ensure that the CPU heat sink and the CPU top surface are in total contact to avoid CPU overheating problem that would cause your system to hang or be unstable.*

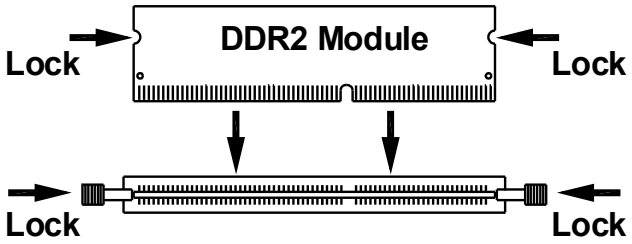
Installing the Memory

The MB879 board supports one DDR2 memory socket for a maximum total memory of 1GB in DDR2 memory type.

Installing and Removing Memory Modules

To install the DDR2 modules, locate the memory slot on the board and perform the following steps:

1. Hold the DDR2 module so that the key of the DDR2 module align with those on the memory slot.
2. Gently push the DDR2 module in an upright position until the clips of the slot close to hold the DDR2 module in place when the DDR2 module touches the bottom of the slot.
3. To remove the DDR2 module, press the clips with both hands.

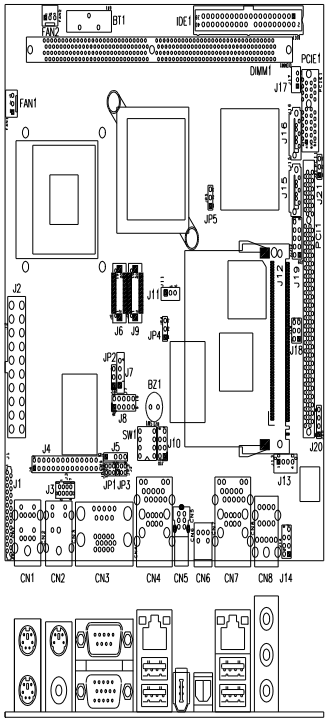


Setting the Jumpers

Jumpers are used on MB879 to select various settings and features according to your needs and applications. Contact your supplier if you have doubts about the best configuration for your needs. The following lists the connectors on MB879 and their respective functions.

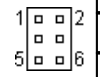
Jumper Locations on MB879.....
JP1: COM4 RS232 +5V / +12V Power Setting.....
JP2: LVDS Panel Voltage Selection.....
JP3: COM3 RS232 +5V / +12V Power Setting.....
JP4: CPU FSB Selection.....
JP5: Clear CMOS Setting.....
SW1: LVDS Resolution Switch Setting.....

Jumper Locations on MB879



Jumpers on MB879.....Page
JP1: COM4 RS232 +5V / +12V Power Setting.....
JP2: LVDS Panel Voltage Selection.....
JP3: COM3 RS232 +5V / +12V Power Setting.....
JP4: CPU FSB Selection.....
JP5: Clear CMOS Setting.....
SW1: LVDS Resolution Switch Setting.....

JP1: COM4 RS232 +5V / +12V Power Setting

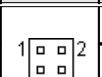
Pin #	Signal Name	JP1	Signal Name	Pin #
1	RI		+12V	2
3	RI (Default)		RI (Default)	4
5	RI		+5V	6

COM4 Settings: Pin 1-2 short = +12V, Pin 5-6 short = +5V, Pin 3-4 Standard COM Port

JP2: LVDS Panel Voltage Selection

JP2	LVDS Voltage
	3.3V
	5V

JP3: COM3 RS232 +5V / +12V Power Setting

Pin #	Signal Name	JP3	Signal Name	Pin #
1	RI		+12V	2
3	RI (Default)		RI (Default)	4
5	RI		+5V	6

COM3 Settings: Pin 1-2 short = +12V, Pin 5-6 short = +5V, Pin 3-4 Standard COM Port

JP4: CPU FSB Selection

JP4	CPU FSB
	400MHz
	533MHz

JP5: Clear CMOS Setting

JP5	Setting
	Normal
	Clear CMOS

SW1: LVDS Resolution Switch Setting

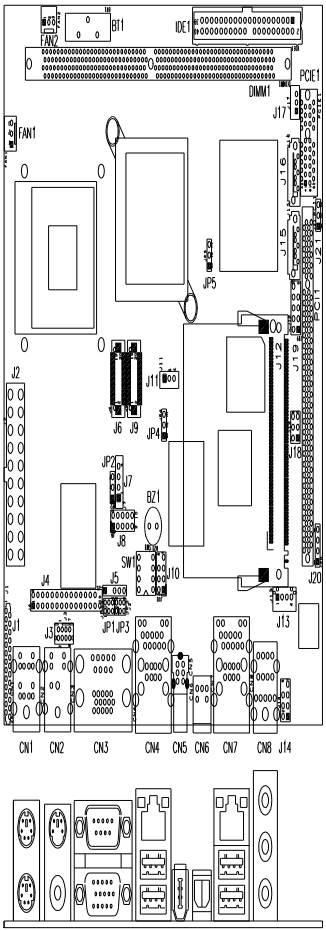
SW1-1	SW1-2	SW1-3	SW1-4	Resolution
OFF	ON	ON	OFF	800x600
ON	OFF	ON	OFF	1024x768
OFF	OFF	ON	OFF	1280 X 1024
ON	ON	OFF	OFF	1400 X 1050
OFF	OFF	OFF	OFF	CRT Only

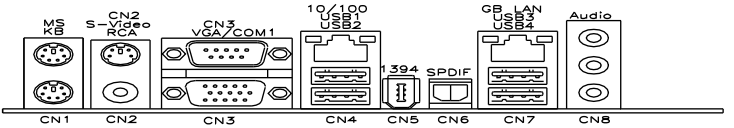
Connectors on MB879

The connectors on MB879 allow you to connect external devices such as keyboard, floppy disk drives, hard disk drives, etc. The following table lists the connectors on MB879 and their respective functions.

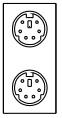
Connector Locations on MB879.....
CN1: PS/2 Keyboard and PS/2 Mouse Connectors.....
CN2: S-Video and RCA Connector for TV out.....
CN3: COM1 and VGA Connector.....
CN4: 10/100 LAN RJ-45 and USB1/2 Ports.....
CN5: 1394 Connector.....
CN6: SPDIF Out Connector.....
CN7: Gigabit LAN RJ-45 and USB3/4 Ports.....
CN8: Audio Connector.....
FAN1: CPU Fan Power Connector.....
FAN2: System Fan Power Connector.....
J1: Floppy Drive Connector.....
IDE1: IDE Connector.....
J2: ATX Power Supply Connector.....
J3: TV Out Header (RCA & S-Video).....
J4: COM2, COM3, COM4 Serial Ports.....
J5: IrDA Connector.....
J9, J6: LVDS Connectors (1st channel, 2nd channel).....
J7: Panel Inverter Power Connector.....
J8: Digital I/O.....
J10: 1394 Connector.....
J11: Panel Inverter Power Connector.....
J12: Mini PCI Connector.....
J13: Speaker Connector.....
J14: Front Audio Connector.....
J15, J16: Serial ATA Connectors.....
J17: Wake On LAN Connector.....
J18: System Function Connector.....
J19: USB5 / USB6 Connector.....
J20: CD-In Pin Header.....
J21: Power LED Connector.....
J22: Compact Flash Connector (solder side).....
PCI1: PCI Slot (supports 2 Masters).....
PCIE1: PCI-E(x1) Slot.....

Connector Locations on MB879





CN1: PS/2 Keyboard and PS/2 Mouse Connectors



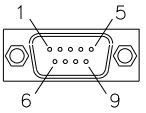
PS/2 Mouse

PS/2 Keyboard

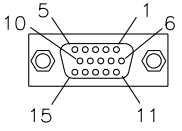
Signal Name	Keyboard	Mouse	Signal Name
Keyboard data	1	1	Mouse data
N.C.	2	2	N.C.
GND	3	3	GND
5V	4	4	5V
Keyboard clock	5	5	Mouse clock
N.C.	6	6	N.C.

CN2: S-Video and RCA Connector for TV out

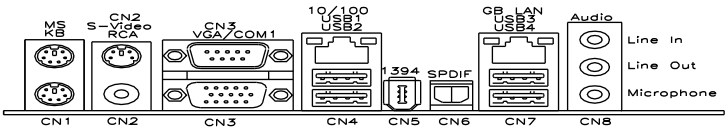
CN3: COM1 and VGA Connector



Signal Name	Pin #	Pin #	Signal Name
DCD	1	6	DSR
RXD	2	7	RTS
TXD	3	8	CTS
DTR	4	9	RI
GND	5	10	Not Used



Signal Name	Pin #	Pin #	Signal Name
Red	1	2	Green
Blue	3	4	N.C.
GND	5	6	GND
GND	7	8	GND
N.C.	9	10	GND
+5V	11	12	DDCDAT
HSYNC	13	14	VSYNC
DDCCLK	15		



CN4: 10/100 LAN RJ-45 and USB1/2 Ports

CN5: 1394 Connector

CN6: SPDIF Out Connector

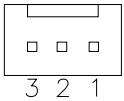
CN7: Gigabit LAN RJ-45 and USB3/4 Ports

CN8: Audio Connector

The audio connector, from top to bottom, is composed of Line in, Line out and Microphone jacks.

FAN1: CPU Fan Power Connector

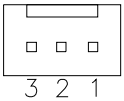
FAN1 is a 3-pin header for the CPU fan with 12V (500mA).



Pin #	Signal Name
1	Ground
2	+12V
3	Rotation detection

FAN2: System Fan Power Connector

FAN2 is a 3-pin header for system fans. The fan must be 12V (500mA).



Pin #	Signal Name
1	Ground
2	+12V
3	Rotation detection

J1: Floppy Drive Connector

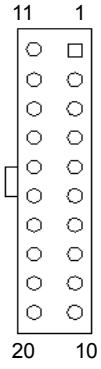
J1 is a slim 26-pin connector and will support up to 2.88MB FDD.

Signal Name	Pin #	Pin #	Signal Name
VCC	1	2	INDEX
VCC	3	4	DRV_SEL
VCC	5	6	DSK_CH
NC	7	8	NC
NC	9	10	MOTOR
DINST	11	12	DIR
NC	13	14	STEP
GND	15	16	WDATA
GND	17	18	WGATE
GND	19	20	TRACK
NC	21	22	WPROT
GND	23	24	RDATA
GND	25	26	SIDE

IDE1: IDE Connector

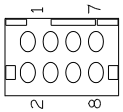
Signal Name	Pin #	Pin #	Signal Name
Reset IDE	1	2	Ground
Host data 7	3	4	Host data 8
Host data 6	5	6	Host data 9
Host data 5	7	8	Host data 10
Host data 4	9	10	Host data 11
Host data 3	11	12	Host data 12
Host data 2	13	14	Host data 13
Host data 1	15	16	Host data 14
Host data 0	17	18	Host data 15
Ground	19	20	Protect pin
DRQ0	21	22	Ground
Host IOW	23	24	Ground
Host IOR	25	26	Ground
IOCHRDY	27	28	Host ALE
DACK0	29	30	Ground
IRQ14	31	32	No connect
Address 1	33	34	No connect
Address 0	35	36	Address 2
Chip select 0	37	38	Chip select 1
Activity	39	40	Ground

J2: ATX Power Supply Connector



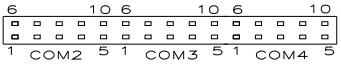
Signal Name	Pin #	Pin #	Signal Name
3.3V	11	1	3.3V
-12V	12	2	3.3V
Ground	13	3	Ground
PS-ON	14	4	+5V
Ground	15	5	Ground
Ground	16	6	+5V
Ground	17	7	Ground
-5V	18	8	Power good
+5V	19	9	5VSB
+5V	20	10	+12V

J3: TV Out Header (RCA & S-Video)



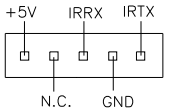
Signal Name	Pin	Pin	Signal Name
NC	1	2	NC
Y	3	4	Ground
C	5	6	Ground
COMP	7	8	Ground

J4: COM2, COM3, COM4 Serial Ports



Pin #	Signal Name (RS-232)
1	DCD, Data carrier detect
2	RXD, Receive data
3	TXD, Transmit data
4	DTR, Data terminal ready
5	Ground
6	DSR, Data set ready
7	RTS, Request to send
8	CTS, Clear to send
9	RI, Ring indicator
10	No Connect.

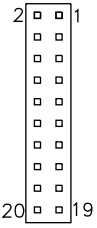
J5: IrDA Connector



Pin #	Signal Name
1	+5V
2	No connect
3	Ir RX
4	Ground
5	Ir TX

J9, J6: LVDS Connectors (1st channel, 2nd channel)

The LVDS connectors are composed of the first channel (J9) and second channel (J6) to support 18/36-bit or 24/48-bit.

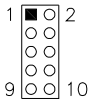


Signal Name	Pin #	Pin #	Signal Name
TX0-	2	1	TX0+
Ground	4	3	Ground
TX1-	6	5	TX1+
5V/3.3V	8	7	Ground
TX3-	10	9	TX3+
TX2-	12	11	TX2+
Ground	14	13	Ground
TXC-	16	15	TXC+
5V/3.3V	18	17	ENABKL
+12V	20	19	+12V

J7: Panel Inverter Power Connector

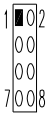
Pin #	Signal Name
1	+12V (1A)
2	Ground
3	LCDVDD
4	ENABKL

J8: Digital I/O



Signal Name	Pin	Pin	Signal Name
GND	1	2	VCC
OUT3	3	4	OUT1
OUT2	5	6	OUT0
IN3	7	8	IN1
IN2	9	10	IN0

J10: 1394 Connector

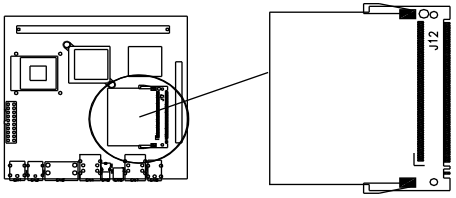


Signal Name	Pin	Pin	Signal Name
TPA+	1	2	TPB+
TPA-	3	4	TPB-
+12V	5	6	NC
GND	7	8	NC

J11: Panel Inverter Power Connector

Pin #	Signal Name
1	+12V (1A)
2	NC
3	Ground

J12: Mini PCI Connector

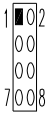


J13: Speaker Connector

The J15 connector supports 2W/8ohm stereo audio power amplifier.

Pin #	Signal Name
1	Audio L
2	Ground
3	Ground
4	Audio R

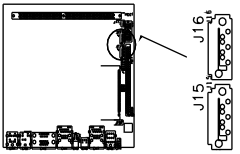
J14: Front Audio Connector



Signal Name	Pin	Pin	Signal Name
Rear Audio R	1	5	Rear Audio L
Front Audio R	2	6	Front Audio L
Mic In	3	7	VREF Out
Ground	4	8	

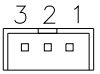
REMARKS: To use the front audio connector, the jumpers on pin 1-3 and pin 2-4 must be removed.

J15, J16: Serial ATA Connectors



J17: Wake On LAN Connector

J17 is a 3-pin header for the Wake On LAN function. Wake On LAN will function properly only with an ATX power supply with 5VSB that has 200mA.



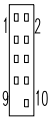
Pin #	Signal Name
1	+5VSB
2	Ground
3	-PME

J18: System Function Connector

Signal Name	Pin	Pin	Signal Name
Ground	1	2	PS_ON
5V	3	4	HDD Active
Ground	5	7	Reset

ATX power on switch: Pins 1-2
HDD LED: Pins 3-4
Reset switch: Pins 5-6

J19: USB5 / USB6 Connector



Signal Name	Pin	Pin	Signal Name
Vcc	1	2	Vcc
D-	3	4	D-
D+	5	6	D+
Ground	7	8	Ground
Protect Pin	9	10	NC

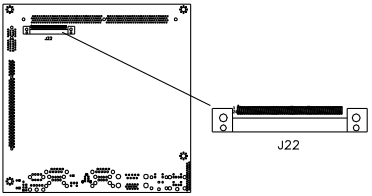
J20: CD-In Pin Header

Pin #	Signal Name
1	CD Audio L
2	Ground
3	Ground
4	CD Audio R

J21: Power LED Connector

Pin #	Signal Name
1	Vcc
2	NC
3	PLED

J22: Compact Flash Connector (solder side, option)



PCI1: PCI Slot (supports 2 Masters)

PCIE1: PCI-E(x1) Slot

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BIOS Setup

This chapter describes the different settings available in the Award BIOS that comes with the board. The topics covered in this chapter are as follows:

BIOS Introduction.....
BIOS Setup.....
Standard CMOS Setup.....
Advanced BIOS Features.....
Advanced Chipset Features.....
Integrated Peripherals.....
Power Management Setup.....
PNP/PCI Configurations.....
PC Health Status.....
Frequency/Voltage Control.....
Load Fail-Safe Defaults.....
Load Optimized Defaults.....
Set Supervisor/User Password.....
Save & Exit Setup.....
Exit Without Saving.....

BIOS Introduction

The Award BIOS (Basic Input/Output System) installed in your computer system's ROM supports Intel processors. The BIOS provides critical low-level support for a standard device such as disk drives, serial ports and parallel ports. It also adds virus and password protection as well as special support for detailed fine-tuning of the chipset controlling the entire system.

BIOS Setup

The Award BIOS provides a Setup utility program for specifying the system configurations and settings. The BIOS ROM of the system stores the Setup utility. When you turn on the computer, the Award BIOS is immediately activated. Pressing the <Del> key immediately allows you to enter the Setup utility. If you are a little bit late pressing the <Del> key, POST (Power On Self Test) will continue with its test routines, thus preventing you from invoking the Setup. If you still wish to enter Setup, restart the system by pressing the "Reset" button or simultaneously pressing the <Ctrl>, <Alt> and <Delete> keys. You can also restart by turning the system Off and back On again. The following message will appear on the screen:

```
Press  <DEL>  to  Enter  Setup
```

In general, you press the arrow keys to highlight items, <Enter> to select, the <PgUp> and <PgDn> keys to change entries, <F1> for help and <Esc> to quit.

When you enter the Setup utility, the Main Menu screen will appear on the screen. The Main Menu allows you to select from various setup functions and exit choices.

Phoenix - AwardBIOS CMOS Setup Utility

Standard CMOS Features	Frequency/Voltage Control
Advanced BIOS Features	Load Fail-Safe Defaults
Advanced Chipset Features	Load Optimized Defaults
Integrated Peripherals	Set Supervisor Password
Power Management Setup	Set User Password
PnP/PCI Configurations	Save & Exit Setup
PC Health Status	Exit Without Saving
ESC : Quit	↑ ↓ → ← : Select Item
F10 : Save & Exit Setup	
Time, Date, Hard Disk Type…	

The section below the setup items of the Main Menu displays the control keys for this menu. At the bottom of the Main Menu just below the control keys section, there is another section, which displays information on the currently highlighted item in the list.

***Note**: If the system cannot boot after making and saving system changes with Setup, the Award BIOS supports an override to the CMOS settings that resets your system to its default.*

***Warning:** It is strongly recommended that you avoid making any changes to the chipset defaults. These defaults have been carefully chosen by both Award and your system manufacturer to provide the absolute maximum performance and reliability. Changing the defaults could cause the system to become unstable and crash in some cases.*

Standard CMOS Setup

"Standard CMOS Setup" choice allows you to record some basic hardware configurations in your computer system and set the system clock and error handling. If the board is already installed in a working system, you will not need to select this option. You will need to run the Standard CMOS option, however, if you change your system hardware configurations, the onboard battery fails, or the configuration stored in the CMOS memory was lost or damaged.

Phoenix – Award WorkstationBIOS CMOS Setup Utility
Standard CMOS Features

Date (mm:dd:yy)	Wed, Jul 26 2006	Item Help
Time (hh:mm:ss)	11 : 55 : 00	Menu Level >
IDE Channel 0 Master	None	Change the day, month,
IDE Channel 0 Slave	None	Year and century
IDE Channel 1 Master	None	
IDE Channel 1 Slave	None	
IDE Channel 2 Master	None	
IDE Channel 3 Master	None	
Drive A	None	
Video	EGA/VGA	
Halt On	All , But Keyboard	
Base Memory	640K	
Extended Memory	980992K	
Total Memory	982016K	

At the bottom of the menu are the control keys for use on this menu. If you need any help in each item field, you can press the <F1> key. It will display the relevant information to help you. The memory display at the lower right-hand side of the menu is read-only. It will adjust automatically according to the memory changed. The following describes each item of this menu.

Date

The date format is:

Day :	**Sun to Sat**
Month :	**1 to 12**
Date :	**1 to 31**
Year :	**1999 to 2099**

To set the date, highlight the "Date" field and use the PageUp/ PageDown or +/- keys to set the current time.

Time

The time format is: **Hour : 00 to 23**
Minute : 00 to 59
Second : 00 to 59

To set the time, highlight the "Time" field and use the <PgUp>/ <PgDn> or +/- keys to set the current time.

IDE Channel Master/Slave

The onboard PCI IDE connector provides Primary and Secondary channels for connecting up to two IDE hard disks or other IDE devices.

Press <Enter> to configure the hard disk. The selections include Auto, Manual, and None. Select 'Manual' to define the drive information manually. You will be asked to enter the following items.

Capacity :	Capacity/size of the hard disk drive
Cylinder :	Number of cylinders
Head :	Number of read/write heads
Precomp :	Write precompensation
Landing Zone :	Landing zone
Sector :	Number of sectors

The Access Mode selections are as follows:

CHS	(HD < 528MB)
LBA	(HD > 528MB and supports Logical Block Addressing)
Large	(for MS-DOS only)
Auto	

Drive A

These fields identify the types of floppy disk drive A or drive B that has been installed in the computer. The available specifications are:

360KB	1.2MB	720KB	1.44MB	2.88MB
5.25 in.	5.25 in.	3.5 in.	3.5 in.	3.5 in.

Video

This field selects the type of video display card installed in your system. You can choose the following video display cards:

EGA/VGA	For EGA, VGA, SEGA, SVGA or PGA monitor adapters. (default)
CGA 40	Power up in 40 column mode.
CGA 80	Power up in 80 column mode.
MONO	For Hercules or MDA adapters.

Halt On

This field determines whether or not the system will halt if an error is detected during power up.

No errors	The system boot will not be halted for any error that may be detected.
All errors	Whenever the BIOS detects a non-fatal error, the system will stop and you will be prompted.
All, But Keyboard	The system boot will not be halted for a keyboard error; it will stop for all other errors
All, But Diskette	The system boot will not be halted for a disk error; it will stop for all other errors.
All, But Disk/Key	The system boot will not be halted for a keyboard or disk error; it will stop for all others.

Advanced BIOS Features

This section allows you to configure and improve your system and allows you to set up some system features according to your preference.

Phoenix - Award WorkstationBIOS CMOS Setup Utility
Advanced BIOS Features

CPU Feature	Press Enter	ITEM HELP
Hard Disk Boot Priority	Press Enter	
Virus Warning	Disabled	Menu Level >
CPU L1 and L2 Cache	Enabled	
Hyper-Threading Technology	Enabled	
Quick Power On Self Test	Enabled	
First Boot Device	Floppy	
Second Boot Device	Hard Disk	
Third Boot Device	CDROM	
Boot Other Device	Enabled	
Boot Up Floppy Seek	Disabled	
Boot Up NumLock Status	On	
Gate A20 Option	Fast	
Typematic Rate Setting	Disabled	
Typematic Rate (Chars/Sec)	6	
Typematic Delay (Msec)	250	
Security Option	Setup	
APIC Mode	Enabled	
MPS Version Control for OS	1.4	
OS Select For DRAM>64MB	Non-OS2	
HDD S.M.A.R.T. Capability	Disabled	

CPU Feature

Press Enter to configure the settings relevant to CPU Feature.

Hard Disk Boot Priority

With the field, there is the option to choose, aside from the hard disks connected, "Bootable add-in Cards" which refers to other external devices.

Virus Warning

If this option is enabled, an alarm message will be displayed when trying to write on the boot sector or on the partition table on the disk, which is typical of the virus.

CPU L1 and L2 Cache

Cache memory is additional memory that is faster than conventional DRAM (system memory). CPUs from 486-type on up contain internal cache memory, and most, but not all, modern PCs have additional (external) cache memory. When the CPU requests data, the system transfers the requested data from the main DRAM into cache memory, for even faster access by the CPU. These allow you to enable (speed up memory access) or disable the cache function.

Quick Power On Self Test

When enabled, this field speeds up the Power On Self Test (POST) after the system is turned on. If it is set to *Enabled*, BIOS will skip some items.

First/Second/Third Boot Device

These fields determine the drive that the system searches first for an operating system. The options available include *Floppy*, *LS120*, *Hard Disk*, *CDROM, ZIP100*, *USB-Floppy, USB-ZIP*, *USB-CDROM* and *Disable*.

Boot Other Device

These fields allow the system to search for an OS from other devices other than the ones selected in the First/Second/Third Boot Device.

Boot Up Floppy Seek

This feature controls whether the BIOS checks for a floppy drive while booting up. If it cannot detect one (either due to improper configuration or its absence), it will flash an error message.

Boot Up NumLock Status

This allows you to activate the NumLock function after you power up the system.

Gate A20 Option

This field allows you to select how Gate A20 is worked. Gate A20 is a device used to address memory above 1 MB.

Typematic Rate Setting

When disabled, continually holding down a key on your keyboard will generate only one instance. When enabled, you can set the two typematic controls listed next. By default, this field is set to ***Disabled.***

Typematic Rate (Chars/Sec)

When the typematic rate is enabled, the system registers repeated keystrokes speeds. Settings are from 6 to 30 characters per second.

Typematic Delay (Msec)

When the typematic rate is enabled, this item allows you to set the time interval for displaying the first and second characters. By default, this item is set to ***250msec.***

Security Option

This field allows you to limit access to the System and Setup. The default value is ***Setup***. When you select *System,* the system prompts for the User Password every time you boot up. When you select *Setup,* the system always boots up and prompts for the Supervisor Password only when the Setup utility is called up.

APIC Mode

APIC stands for Advanced Programmable Interrupt Controller. The default setting is ***Enabled***.

MPS Version Control for OS

This option is specifies the MPS (Multiprocessor Specification) version for your operating system. MPS version 1.4 added extended configuration tables to improve support for multiple PCI bus configurations and improve future expandability. The default setting is ***1.4***.

OS Select for DRAM > 64MB

This option allows the system to access greater than 64MB of DRAM memory when used with OS/2 that depends on certain BIOS calls to access memory. The default setting is ***Non-OS/2***.

HDD S.M.A.R.T. Capability

The default setting is Disabled.

Advanced Chipset Features

This Setup menu controls the configuration of the chipset.

Phoenix - Award WorkstationBIOS CMOS Setup Utility
Advanced Chipset Features

		ITEM HELP
Current MRC Version	7.4	Menu Level >
Current FSB Frequency	100 MHz	
Current DRAM Frequency	333 MHz	
Memory Frequency For	Auto	
UMA Frame Buffer Size	64MB	
Adjust DRAM Timing	Press Enter	
Adjust PCIE Confg.	Press Enter	
Video Display Devices	CRT Force, Other Auto	
Tv Standard	NTSC	
Memory Hole	Disabled	
System BIOS Cacheable	Disabled	

Phoenix - Award WorkstationBIOS CMOS Setup Utility
Adjust DRAM Timing

		ITEM HELP
Simple Addr Translation	Enable	Menu Level >
LAQ Bypass	Enable	
PIF Stage	Disable	
BIU Power Mgmt	Disable	
Memory Bank Alignment	Auto	
Channel Map NB	2	
Channel Map GFX	4	
Bank0 Map	7	
Bank1 Map	13	
Bank0 Map NB	7	
Bank1 Map NB	13	
Dynamic Clock	Enable	
AUTO Calibration	Enable	
AUTO DQS	Disable	
Address Step Enable	Auto	
Impedance Control	Enable	

Phoenix - Award WorkstationBIOS CMOS Setup Utility
Adjust PCIE Confg.

		ITEM HELP
Add 10% Extra Current	Disabled	Menu Level >
PCIE GFX Overclocking	Disabled	
Power down unused GFX port	Enabled	
Power down unused GPP lane	Enabled	
PCIE CARD WORKAROUND	Enabled	
GFX Link Width	X16	
SDVO	Disabled	
PCIE GFX SB Payload Size	64 Bytes	
PCIE GPP SB Payload Size	64 Bytes	
A-Link & GPP Configuration	4-1-1-1-1 Mode	
Clock Gating for TxClk	Disabled	
PCIE Hide Unused Port	Auto	
L0s/L1 ASPM on Alink-Expre	Disabled	
ATi GFX Card ASPM L1	Disabled	

Current MRC Version

The default setting is 7.4.

Current FSB Frequency
The default setting is 133 MHz

Current DRAM Frequency
The default setting is 266 MHz.

Memory Frequencty For
The default setting is AUTO.

UMA Frame Buffer Size
Frame Buffer is the video memory that stores data for video display (frame). This field is used to determine the memory size for Frame Buffer. Larger frame buffer size increases video performance. The default setting is 64MB.

Video Display Devices
The default setting is CRT Force, Other Auto.

Tv Standard
The default setting is NTSC.

Memory Hole
In order to improve performance, certain space in memory can be reserved for ISA cards. This memory must be mapped into the memory space below 16 MB. The choices are *Enabled* and *Disabled*.

System BIOS Cacheable
The setting of *Enabled* allows caching of the system BIOS ROM at F000h-FFFFFh, resulting in better system performance. However, if any program writes to this memory area, a system error may result.

Simple Addr Translation
The default setting is Enable.

LAQ Bypass
The default setting is Enable.

PIF Stage
The default setting is Disable.

BIU Power Mgmt
The default setting is Disable.

Memory Bank Alignment
The default setting is Auto.

Dynamic Clock
The default setting is Enable.

Auto Calibration
The default setting is Enable.

Auto DQS
The default setting is Disable.

Address Step Enable
The default setting is Auto.

Impedance Control
The default setting is Enable.

Add 10% Extra Current
The default setting is Disabled.

PCIE GFX Overclocking
The default setting is Disabled.

Power down unused GFX ports
The default setting is Enabled.

Power down unused GPP lanes
The default setting is Enabled.

PCIE CARD WORKROUND
The default setting is Enabled.

GFX Link Width
The default setting is x16.

SDVO
The default setting is Disabled.

PCIE GFX SB Payload Size
The default setting is 64 Bytes.

PCIE GPP SB Payload Size
The default setting is 64 Bytes.

A-Link & GPP Configuration
This setting controls the A-Link & GPP configuration.

Clock Gating for TxClk
The default setting is Disabled.

PCIE Hide Unused Port
The default setting is Auto.

L0s/L1 ASPM on Alink-Express
The default setting is Disabled.

ATI GFX Card ASPM L1
The default setting is Disabled.

Integrated Peripherals

This section sets configurations for your hard disk and other integrated peripherals. The first screen shows three main items for user to select. Once an item selected, a submenu appears. Details follow.

Phoenix - Award WorkstationBIOS CMOS Setup Utility
Integrated Peripherals

South OnChip IDE Device	Press Enter	ITEM HELP
South OnChip PCI Device	Press Enter	
Init Display First	PCI Slot	Menu Level >
Surroundview	Disabled	
USB EHCI Controller	Enabled	
OnChip USB Controller	Enabled	
OnChip USB KBC Controller	Enabled	
USB Mouse Support	Disabled	
IDE HDD Block Mode	Enabled	
Power ON Function	BUTTON ONLY	
KB Power ON Password	Enter	
Hot Key Power ON	Ctrl-F1	
Onboard FDC Controller	Enabled	
Onboard Serial Port 1	3F8/IRQ4	
Onboard Serial Port 2	2F8/IRQ3	
UART Mode Select	Normal	
UR2 Duplex Mode	Half	
Watch Dog Timer Select	Disabled	
**** 2nd Super IO Device ****		
Onboard Serial Port 3	3E8h	
Serial Port 3 Use IRQ	IRQ11	
Onboard Serial Port 4	2E8h	
Serial Port 4 Use IRQ	IRQ10	

Phoenix - Award WorkstationBIOS CMOS Setup Utility
South OnChip IDE Device

IDE DMA transfer access	Enabled	ITEM HELP
OnChip IDE Channel0	Enabled	
OnChip IDE Channel1	Enabled	Menu Level >
IDE Prefetch Mode	Disabled	
Primary Master PIO	Auto	
Primary Slave PIO	Auto	
Secondary Master PIO	Auto	
Secondary Slave PIO	Auto	
Primary Master UDMA	Auto	
Primary Slave UDMA	Auto	
Secondary Master UDMA	Auto	
Secondary Slave UDMA	Auto	

Phoenix - Award WorkstationBIOS CMOS Setup Utility
South OnChip PCI Device

Onboard AC97 Audio	Auto	ITEM HELP
Onboard LAN	Enabled	Menu Level >
Onboard 1394	Enabled	

Init Display First
The default setting is *PCI Card*.

USB EHCI Controller
The options for this field are *Enabled* and *Disabled*. By default, this field is set to *Enabled*.

OnChip USB Controller
The options for this field are *Enabled* and *Disabled*. By default, this field is set to *Enabled*.

OnChip USB KBC Controller
The options for this field are *Enabled* and *Disabled*. By default, this field is set to ***Enabled***.

USB Mouse Support
The options for this field are *Enabled* and *Disabled*. By default, this field is set to ***Disabled***.

IDE HDD Block Mode
This field allows your hard disk controller to use the fast block mode to transfer data to and from your hard disk drive.

Power ON Function
This field is related to how the system is powered on – such as with the use of conventional power button, keyboard or hot keys. The default is ***BUTTON ONLY***.

KB Power ON Password
This field allows users to set the password when keyboard power on is the mode of the Power ON function.

Hot Key Power ON
This field sets certain keys, also known as hot keys, on the keyboard that can be used as a 'switch' to power on the system.

Onboard FDC Controller

Select *Enabled* if your system has a floppy disk controller (FDC) installed on the board and you wish to use it. If you install an add-in FDC or the system has no floppy drive, select Disabled in this field.

Onboard Serial Port

These fields allow you to select the onboard serial and parallel ports and their address. The default values for these ports are:

Serial Port 1	3F8/IRQ4
Serial Port 2	2F8/IRQ3
Serial Port 3	3E8h/IRQ11
Serial Port 4	2E8h/IRQ10

UART Mode Select

This field determines the UART 2 mode in your computer. The default value is *Normal*. Other options include *IrDA* and *ASKIR*.

Watch Dog Timer Select

The options available include *2 Min,10 Min,30 Min,1 Hour,2 Hour, 3 Hour,4 Hour and Disabled*. By default, this field is set to *Disabled*.

IDE DMA Transfer Access

Allows IDE transfer to be done in DMA mode. By default, this field is set to ***Enabled***.

IDE Prefetch Mode

The default setting is Disabled.

IDE Primary/Secondary Master/Slave PIO

These fields allow your system hard disk controller to work faster. Rather than have the BIOS issue a series of commands that transfer to or from the disk drive, PIO (Programmed Input/Output) allows the BIOS to communicate with the controller and CPU directly.

The system supports five modes, numbered from 0 (default) to 4, which primarily differ in timing. When Auto is selected, the BIOS will select the best available mode.

IDE Primary/Secondary Master/Slave UDMA

These fields allow your system to improve disk I/O throughput to 33Mb/sec with the Ultra DMA/33 feature. The options are *Auto* and *Disabled*.

Onboard AC97 Audio

The options for this field are *Auto* and *Disabled*. By default, this field is set to ***Auto***.

Onboard LAN

The options for this field are *Enabled* and *Disabled*. By default, this field is set to ***Enabled***.

Onboard 1394

The options for this field are *Enabled* and *Disabled*. By default, this field is set to ***Enabled***

Power Management Setup

Phoenix - Award WorkstationBIOS CMOS Setup Utility
Power Management Setup

		ITEM HELP
ACPI Suspend	S1(POS)	Menu Level >
C2 Disable/Enable	Disabled	
Power Management Option	User Define	
HDD Power Down	Disabled	
Video Off Option	Suspend -> Off	
Video Off Method	V/H SYNC+Blank	
Modem Use IRQ	3	
Soft-Off by PWRBTN	Instant-Off	
PowerOn by PCI Card	Disabled	
PowerFail Status	Always Off	
Wake Up On LAN/Ring	Disabled	
Thermal Duty Cycle	Disabled	
RTC Alarm Resume	Disabled	
Date (of Month)	0	
Resume Time (hh:mm:ss)	0 : 0 : 0	

ACPI Suspend

The default setting of the ACPI Suspend mode is ***S1(POS)***.

C2 Disable/Enable

The default setting is Disabled.

Power Management Option

This field allows you to select the type of power saving management modes. There are four selections for Power Management.

Min. Power Saving	Minimum power management
Max. Power Saving	Maximum power management.
User Define	Each of the ranges is from 1 min. to 1hr. Except for HDD Power Down which ranges from 1 min. to 15 min.

HDD Power Down

When enabled, and after the set time of system inactivity, the hard disk drive will be powered down while all other devices remain active.

Video Off Option

When Always On, the video is off in suspend mode. The default setting is ***Suspend -> Off***.

Video Off Method

This field defines the Video Off features. There are three options.

V/H SYNC + Blank	Default setting, blank the screen and turn off vertical and horizontal scanning.
DPMS	Allows BIOS to control the video display.
Blank Screen	Writes blanks to the video buffer.

Modem Use IRQ

This field sets the IRQ used by the Modem. By default, the setting is ***3***.

Soft-Off by PWRBTN

This field defines the power-off mode when using an ATX power supply. The *Instant Off* mode allows powering off immediately upon pressing the power button. In the *By Hardware* mode, the system powers off when the power button is pressed for more than four seconds or enters the suspend mode when pressed for less than 4 seconds.

PowerOn by PCI Card

By default, this field is disabled.

PowerFail Status

This field sets the system power status whether *Always on or Always off* when power returns to the system from a power failure situation.

Wake Up On LAN/Ring

This field enables or disables the power on of the system through the modem connected to the serial port or LAN.

Thermal Duty Cycle

When the system enters Doze mode, the CPU clock runs only part of the time. You may select the percent of time that the clock runs.

RTC Alarm Resume

This field enables or disables the resumption of the system operation. When enabled, the user is allowed to set the *Date* and *Time*.

PNP/PCI Configurations

This option configures the PCI bus system. All PCI bus systems on the system use INT#, thus all installed PCI cards must be set to this value.

Phoenix - Award WorkstationBIOS CMOS Setup Utility
PnP/PCI Configurations

Reset Configuration Data	Disabled	ITEM HELP
		Menu Level
Resources Controlled By	Auto (ESCD)	
IRQ Resources	Press Enter	Select Yes if you are using a Plug and Play capable operating system Select No if you need the BIOS to configure non-boot devices
PCI/VGA Palette Snoop	Disabled	
Assign IRQ For VGA	Enabled	
Assign IRQ For USB	Enabled	
PCI Express relative items		
Maximum Payload Size	4096	

Reset Configuration Data

This field allows you to determine whether to reset the configuration data or not. The default value is ***Disabled.***

Resources Controlled by

This PnP BIOS can configure all of the boot and compatible devices with the use of a PnP operating system such as Windows 95.

PCI/VGA Palette Snoop

Some non-standard VGA display cards may not show colors properly. This field allows you to set whether or not MPEG ISA/VESA VGA cards can work with PCI/VGA. When this field is enabled, a PCI/VGA can work with an MPEG ISA/VESA VGA card. When this field is disabled, a PCI/VGA cannot work with an MPEG ISA/VESA card.

Maximum Payload Size

The default setting of the PCI Express Maximum Payload Size is 4096.

PC Health Status

This section shows the parameters in determining the PC Health Status. These parameters include temperatures, fan speeds and voltages.

Phoenix - Award WorkstationBIOS CMOS Setup Utility
PC Health Status

		ITEM HELP
CPU Warning Temperature	Disabled	
VCCP	1.04 V	
VCore	1.32 V	
+3.3 V	3.34 V	
+5.0 V	4.91 V	
+12.0V	12.03 V	
+1.8 VMEM	1.82 V	
North Bridge	1.20 V	
Voltage Battery	3.07 V	
System TEMP	46 ℃	
CPU TEMP	44 ℃	
North Bridge TEMP	45 ℃	
CPU FAN Speed(FAN1)	7031 RPM	
SYSTEM FAN Speed(FAN2)	0 RPM	

CPU Warning Temperature

This field allows the user to set the temperature so that when the temperature is reached, the system sounds a warning. This function can help prevent damage to the system that is caused by overheating.

Temperatures/Voltages

These fields are the parameters of the hardware monitoring function feature of the board. The values are read-only values as monitored by the system and show the PC health status.

Frequency/Voltage Control

This section shows the user how to configure the processor frequency.

Phoenix - Award WorkstationBIOS CMOS Setup Utility
Frequency/Voltage Control

Auto Detect PCI Clk	Disabled	ITEM HELP
Spread Spectrum	Disabled	Menu Level >

Auto Detect PCI Clk

This field enables or disables the auto detection of the PCI clock.

Spread Spectrum

This field sets the value of the spread spectrum. The default setting is ***Disabled***. This field is for CE testing use only.

Load Fail-Safe Defaults

This option allows you to load the troubleshooting default values permanently stored in the BIOS ROM. These default settings are non-optimal and disable all high-performance features.

Load Optimized Defaults

This option allows you to load the default values to your system configuration. These default settings are optimal and enable all high performance features.

Set Supervisor/User Password

These two options set the system password. Supervisor Password sets a password that will be used to protect the system and Setup utility. User Password sets a password that will be used exclusively on the system. To specify a password, highlight the type you want and press <Enter>. The Enter Password: message prompts on the screen. Type the password, up to eight characters in length, and press <Enter>. The system confirms your password by asking you to type it again. After setting a password, the screen automatically returns to the main screen.

To disable a password, just press the <Enter> key when you are prompted to enter the password. A message will confirm the password to be disabled. Once the password is disabled, the system will boot and you can enter Setup freely.

Save & Exit Setup

This option allows you to determine whether or not to accept the modifications. If you type "Y", you will quit the setup utility and save all changes into the CMOS memory. If you type "N", you will return to Setup utility.

Exit Without Saving

Select this option to exit the Setup utility without saving the changes you have made in this session. Typing "Y" will quit the Setup utility without saving the modifications. Typing "N" will return you to Setup utility.

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Drivers Installation

This section describes the installation procedures for software and drivers under the Windows 2000 and Windows XP. The software and drivers are included with the board. If you find the items missing, please contact the vendor where you made the purchase. The contents of this section include the following:

ATI Radeon Xpress 200 Series Drivers Installation.....
Realtek AC97 Codec Audio Driver Installation.....
LAN Driver Installation.....

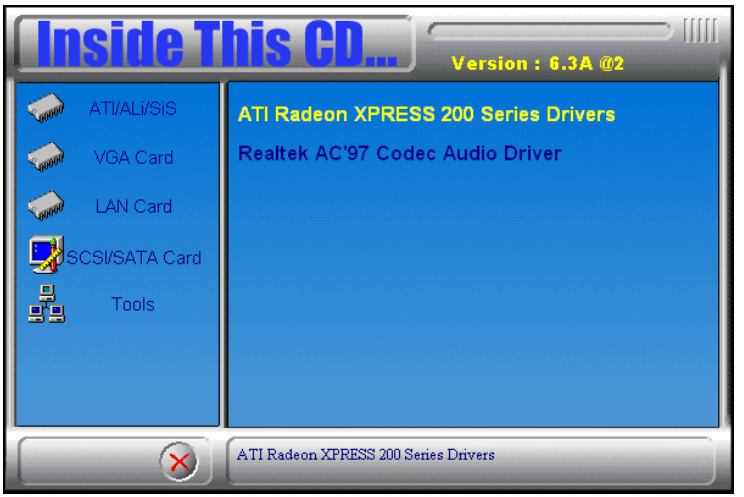
IMPORTANT NOTE:
After installing your Windows operating system (Windows 2000/ XP), you must install first the Intel Chipset Software Installation Utility before proceeding with the drivers installation.

ATI Radeon Xpress 200 Series Drivers Installation

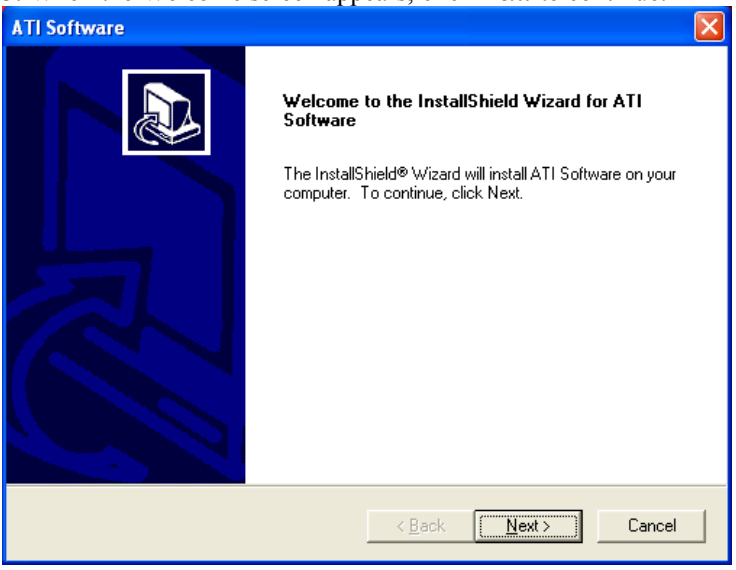
The ATI Radeon Xpress 200 Series Drivers come in the CD with the motherboard. Follow the instructions below to complete the installation under Windows 2000/XP.

1. Insert the CD that comes with the board. Click ***ATI RC410MD Chipset Drivers*** and then ***ATI Radeon XPRESS 200 Series Drivers***.

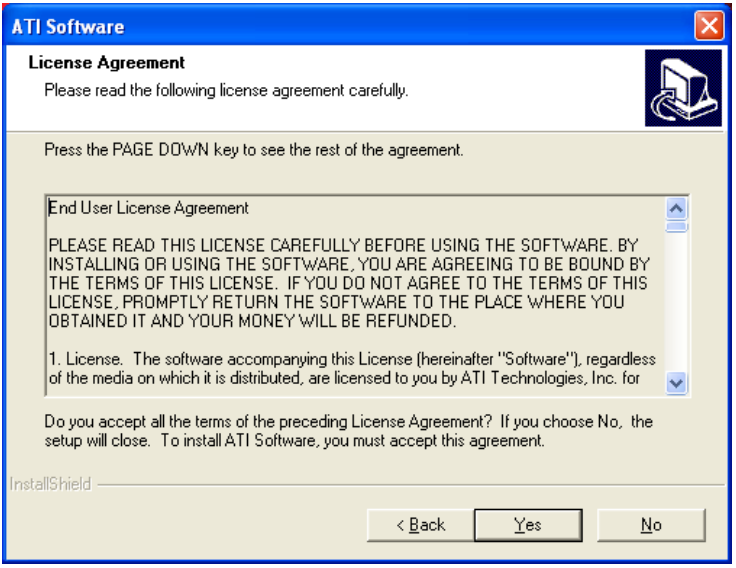
2. Click ***ATI Radeon XPRESS 200 Series Drivers.***



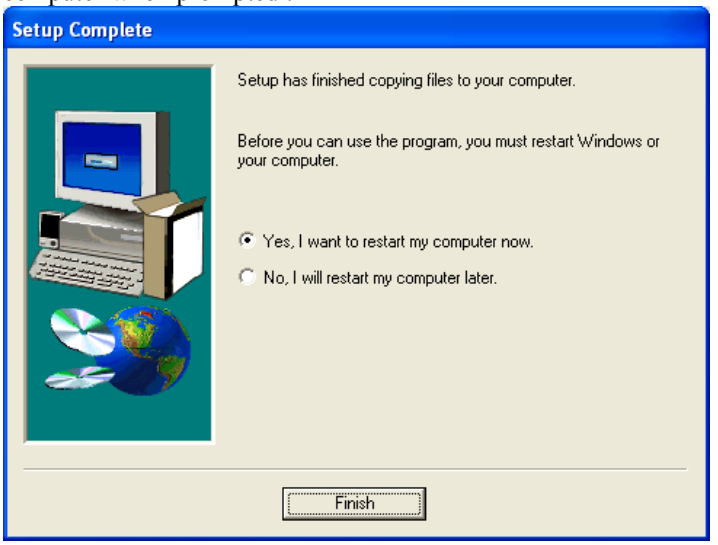
3. When the Welcome screen appears, click ***Next*** to continue.


ATI Software
Welcome to the InstallShield Wizard for ATI Software
The InstallShield® Wizard will install ATI Software on your computer. To continue, click Next.
< Back
Next >
Cancel

4. Click ***Yes*** to accept the software license agreement and proceed with the installation process.


ATI Software
License Agreement
Please read the following license agreement carefully.
Press the PAGE DOWN key to see the rest of the agreement.
End User License Agreement
PLEASE READ THIS LICENSE CAREFULLY BEFORE USING THE SOFTWARE. BY INSTALLING OR USING THE SOFTWARE, YOU ARE AGREEING TO BE BOUND BY THE TERMS OF THIS LICENSE. IF YOU DO NOT AGREE TO THE TERMS OF THIS LICENSE, PROMPTLY RETURN THE SOFTWARE TO THE PLACE WHERE YOU OBTAINED IT AND YOUR MONEY WILL BE REFUNDED.
1. License. The software accompanying this License (hereinafter "Software"), regardless of the media on which it is distributed, are licensed to you by ATI Technologies, Inc. for
Do you accept all the terms of the preceding License Agreement? If you choose No, the setup will close. To install ATI Software, you must accept this agreement.
InstallShield
< Back
Yes
No

5. The Setup process is now complete. Click ***Finish*** to restart the computer and for changes to take effect. When the computer has restarted, the system will be able to find some devices. Restart your computer when prompted .

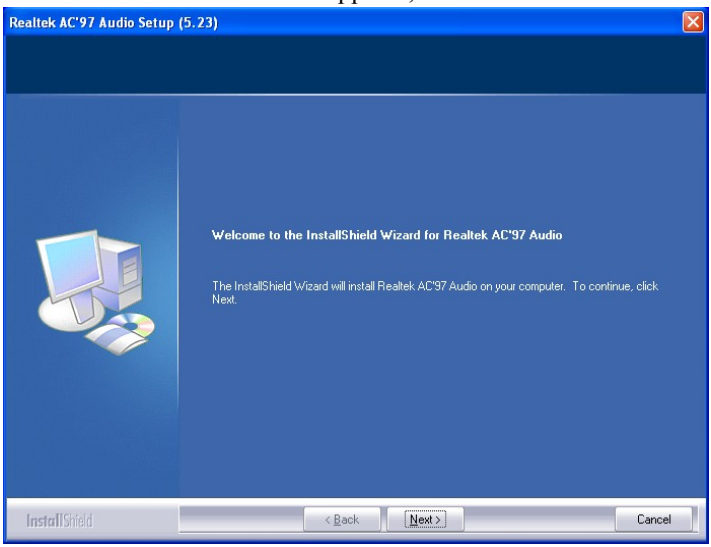

Setup Complete
Setup has finished copying files to your computer.
Before you can use the program, you must restart Windows or your computer.
Yes, I want to restart my computer now.
No, I will restart my computer later.
Finish

Realtek AC97 Codec Audio Driver Installation

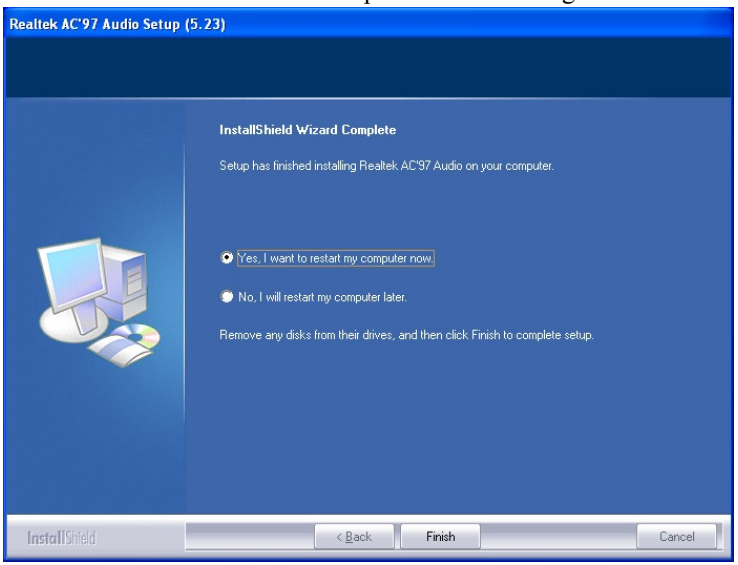
Follow the steps below to install the Realtek AC97 Codec Audio Drivers.

1. Insert the CD that comes with the board. Click ***ATI RC410MD Chipset Drivers*** and then ***Realtek AC'97 Codec Audio Driver***.

2. When the Welcome screen appears, click ***Next*** to continue.


Realtek AC'97 Audio Setup (5.23)
Welcome to the InstallShield Wizard for Realtek AC'97 Audio
The InstallShield Wizard will install Realtek AC'97 Audio on your computer. To continue, click Next.
InstallShield
< Back
Next >
Cancel

3. Click ***Finish*** to restart the computer and for changes to take effect. .


Realtek AC'97 Audio Setup (5.23)
InstallShield Wizard Complete
Setup has finished installing Realtek AC'97 Audio on your computer.
Yes, I want to restart my computer now.
No, I will restart my computer later.
Remove any disks from their drives, and then click Finish to complete setup.
InstallShield
< Back
Finish
Cancel

LAN Driver Installation

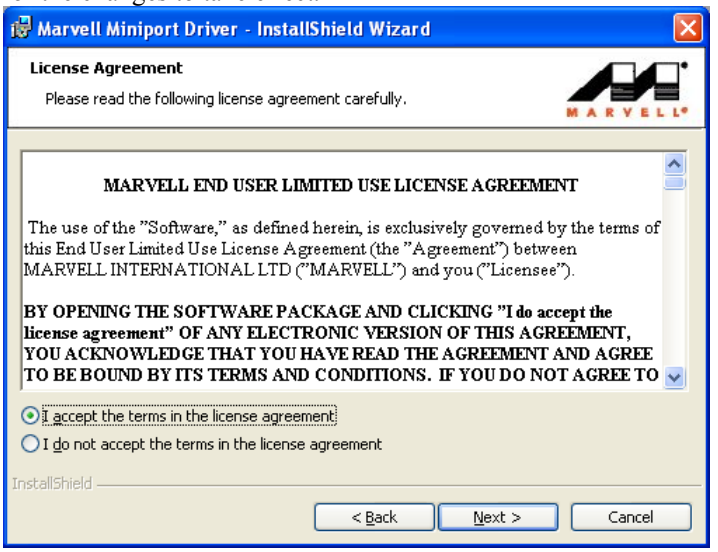
Follow the steps below to install the **Marvell Gigabit LAN** drivers.

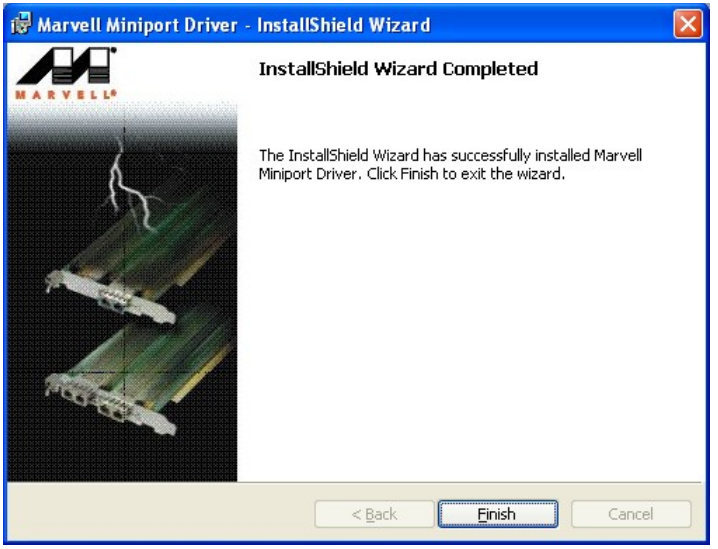
1. Insert the CD that comes with the board. Click ***LAN Card*** and then ***Marvell LAN Controller Driver***.

2. Click Next when the InstallShield Wizard welcome screen appears.

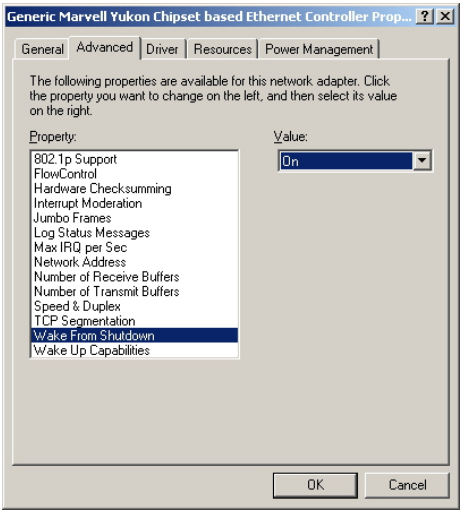
Marvell Miniport Driver - InstallShield Wizard
MARVELL
Welcome to the InstallShield Wizard for Marvell Miniport Driver
The InstallShield(R) Wizard will install Marvell Miniport Driver on your computer. To continue, click Next.
WARNING: This program is protected by copyright law and international treaties.
< Back
Next >
Cancel

3. Click Next to agree with the license agreement. Click Next when the Readme Information screen appears to proceed with the drives installation process. When the Installation is complete, click Finish for the changes to take effect.


Marvell Miniport Driver - InstallShield Wizard
License Agreement
Please read the following license agreement carefully.
MARVELL
MARVELL END USER LIMITED USE LICENSE AGREEMENT
The use of the "Software," as defined herein, is exclusively governed by the terms of this End User Limited Use License Agreement (the "Agreement") between MARVELL INTERNATIONAL LTD ("MARVELL") and you ("Licensee").
BY OPENING THE SOFTWARE PACKAGE AND CLICKING "I do accept the license agreement" OF ANY ELECTRONIC VERSION OF THIS AGREEMENT, YOU ACKNOWLEDGE THAT YOU HAVE READ THE AGREEMENT AND AGREE TO BE BOUND BY ITS TERMS AND CONDITIONS. IF YOU DO NOT AGREE TO
I accept the terms in the license agreement
I do not accept the terms in the license agreement
InstallShield
< Back
Next >
Cancel


Marvell Miniport Driver - InstallShield Wizard
MARVELL
InstallShield Wizard Completed
The InstallShield Wizard has successfully installed Marvell Miniport Driver. Click Finish to exit the wizard.
< Back
Finish
Cancel

4. To use the wake up function by PCIe LAN, go to the Device Manager under Windows and select LAN controller. The following window will appear (Generic Marvell Yukon Chipset based Ethernet Controller Properties). Click Advanced and select Wake From Shutdown. In the Value field on the right, select On.



5. Then, also in the Advanced section, click on Wake Up Capabilities. In the Value field on the right, select Magic Packet, then click OK.

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Appendix

A. I/O Port Address Map

Each peripheral device in the system is assigned a set of I/O port addresses which also becomes the identity of the device. The following table lists the I/O port addresses used.

Address	Device Description
000h - 01Fh	DMA Controller #1
020h - 03Fh	Interrupt Controller #1
040h - 05Fh	Timer
060h - 06Fh	Keyboard Controller
070h - 07Fh	Real Time Clock, NMI
080h - 09Fh	DMA Page Register
0A0h - 0BFh	Interrupt Controller #2
0C0h - 0DFh	DMA Controller #2
0F0h	Clear Math Coprocessor Busy Signal
0F1h	Reset Math Coprocessor
1F0h - 1F7h	IDE Interface
278 - 27F	Parallel Port #2(LPT2)
2F8h - 2FFh	Serial Port #2(COM2)
2B0 - 2DF	Graphics adapter Controller
378h - 3FFh	Parallel Port #1(LPT1)
360 - 36F	Network Ports
3B0 - 3BF	Monochrome & Printer adapter
3C0 - 3CF	EGA adapter
3D0 - 3DF	CGA adapter
3F0h - 3F7h	Floppy Disk Controller
3F8h - 3FFh	Serial Port #1(COM1)

B. Interrupt Request Lines (IRQ)

Peripheral devices use interrupt request lines to notify CPU for the service required. The following table shows the IRQ used by the devices on board.

Level	Function
IRQ0	System Timer Output
IRQ1	Keyboard
IRQ2	Interrupt Cascade
IRQ3	Serial Port #2
IRQ4	Serial Port #1
IRQ5	Reserved
IRQ6	Floppy Disk Controller
IRQ7	Parallel Port #1
IRQ8	Real Time Clock
IRQ9	Reserved
IRQ10	Reserved
IRQ11	Reserved
IRQ12	PS/2 Mouse
IRQ13	80287
IRQ14	Primary IDE
IRQ15	Secondary IDE

C. Watchdog Timer Configuration

The WDT is used to generate a variety of output signals after a user programmable count. The WDT is suitable for use in the prevention of system lock-up, such as when software becomes trapped in a deadlock. Under these sorts of circumstances, the timer will count to zero and the selected outputs will be driven. Under normal circumstance, the user will restart the WDT at regular intervals before the timer counts to zero.

SAMPLE CODE:

File : ITE8712.H

```
//=============================================================================
//
// THIS CODE AND INFORMATION IS PROVIDED "AS IS" WITHOUT WARRANTY OF ANY
// KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE
// IMPLIED WARRANTIES OF MERCHANTABILITY AND/OR FITNESS FOR A PARTICULAR
// PURPOSE.
//
//=============================================================================
#ifndef __ITE8712_H
#define __ITE8712_H                    1
//=============================================================================
#define       ITE8712_INDEX_PORT       (ITE8712_BASE)
#define       ITE8712_DATA_PORT        (ITE8712_BASE+1)
//=============================================================================
#define       ITE8712_REG_LD                  0x07
//=============================================================================
//=============================================================================
#define       ITE8712_IO_PORT                 0x0803
//=============================================================================
#define ITE8712_UNLOCK1                 0x87
#define ITE8712_UNLOCK2                 0x01
#define ITE8712_UNLOCK3                 0x55
#define ITE8712_UNLOCK4                 0xAA
#define ITE8712_LOCK                0xFF
//=============================================================================
unsigned int Init_ITE8712(void);
void Set_ITE8712_LD( unsigned char);
void Set_ITE8712_Reg( unsigned char, unsigned char);
unsigned char Get_ITE8712_Reg( unsigned char);
//=============================================================================
#endif//__ITE8712_H
```

File : ITE8712.CPP

```
//=============================================================================
//
// THIS CODE AND INFORMATION IS PROVIDED "AS IS" WITHOUT WARRANTY OF ANY
// KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE
// IMPLIED WARRANTIES OF MERCHANTABILITY AND/OR FITNESS FOR A PARTICULAR
// PURPOSE.
//
//=============================================================================
#include "ITE8712.H"
#include <dos.h>
//=============================================================================
unsigned int ITE8712_BASE;
void Unlock_ITE8712 (void);
void Lock_ITE8712 (void);
//=============================================================================
unsigned int Init_ITE8712(void)
{
        unsigned int result; //0=NA,1=ITE8712

        ITE8712_BASE = 0x2E;
        result = Get_ITE8712_Reg(0x21);
        if (result == 0x12)
        {
                result = 1;
                goto Init_Finish;
        }

        ITE8712_BASE = 0x4E;
        result = Get_ITE8712_Reg(0x21);
        if (result == 0x12)
        {
                result = 1;
                goto Init_Finish;
        }

        ITE8712_BASE = 0x00;
        result = 0;

Init_Finish:
        return (result);
}
//=============================================================================
void Unlock_ITE8712 (void)
{
        outportb(ITE8712_INDEX_PORT, ITE8712_UNLOCK1);
        outportb(ITE8712_INDEX_PORT, ITE8712_UNLOCK2);
        outportb(ITE8712_INDEX_PORT, ITE8712_UNLOCK3);

if (ITE8712_BASE == 0x2E)
        outportb(ITE8712_INDEX_PORT, ITE8712_UNLOCK3);
else
        outportb(ITE8712_INDEX_PORT, ITE8712_UNLOCK4);
}
//=============================================================================
void Lock_ITE8712 (void)
{
      outportb(ITE8712_INDEX_PORT, ITE8712_LOCK);
```

```
}
//===========================================================================
void Set_ITE8712_LD( unsigned char LD)
{
        Unlock_ITE8712();
        outportb(ITE8712_INDEX_PORT, ITE8712_REG_LD);
        outportb(ITE8712_DATA_PORT, LD);
        Lock_ITE8712();
}
//===========================================================================
void Set_ITE8712_Reg( unsigned char REG, unsigned char DATA)
{
        Unlock_ITE8712();
        outportb(ITE8712_INDEX_PORT, REG);
        outportb(ITE8712_DATA_PORT, DATA);
        Lock_ITE8712();
}
//===========================================================================
unsigned char Get_ITE8712_Reg(unsigned char REG)
{
        unsigned char Result;
        Unlock_ITE8712();
        outportb(ITE8712_INDEX_PORT, REG);
        Result = inportb(ITE8712_DATA_PORT);
        Lock_ITE8712();
        return Result;
}
//===========================================================================
```

File : Main.cpp

```
//===========================================================================
//
// THIS CODE AND INFORMATION IS PROVIDED "AS IS" WITHOUT WARRANTY OF ANY
// KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE
// IMPLIED WARRANTIES OF MERCHANTABILITY AND/OR FITNESS FOR A PARTICULAR
// PURPOSE.
//
//===========================================================================
#include <stdio.h>
#include <stdlib.h>
#include "ITE8712.H"
//===========================================================================
int main (int argc, char *argv[]);
void copyright(void);
void EnableWDT(int);
void DisableWDT(void);
//===========================================================================
int main (int argc, char *argv[])
{
        unsigned char bTime;
        char **endptr;

        copyright();

        if (argc != 2)
        {
                printf(" Parameter incorrect!!\n");
```

```
            return 1;
        }

        if (Init_ITE8712() == 0)
        {
            printf(" ITE8712 is not detected, program abort.\n");
            return 1;
        }

        bTime = strtol (argv[1], endptr, 10);

        if (bTime == 0)
        {
            printf("Watch Dog Timer is disabled !!\n", bTime);
            DisableWDT();
        }
        else
        {
            printf("System will reset after %d seconds\n", bTime);
            EnableWDT(bTime);
        }
        return 0;
}
//===========================================================================
void copyright(void)
{
        printf("\n========= ITE8712 Watch Timer Tester (AUTO DETECT) ========\n"\
                        "       Usage : ITE8712 reset_time Unit\n"\
                        "       Ex : ITE8712 3 => reset system after 3 Seconds\n"\
                        "            ITE8712 0 => disable watch dog timer\n");
}
//===========================================================================
void EnableWDT(int interval)
{

        Set_ITE8712_LD(0x07);                           //Set Logic Device 7
        Set_ITE8712_Reg(0x72, 0xC0);                    //Enable WDT
        Set_ITE8712_Reg(0x73, interval);            //set timer

}
//===========================================================================
void DisableWDT(void)
{
        Set_ITE8712_LD(0x07);                           //switch to logic device 7
        Set_ITE8712_Reg(0x72, 0x00);                //watchdog disabled
        Set_ITE8712_Reg(0x73, 0x00);                //Clear watchdog timer
}
//===========================================================================
```